Attorney Docket No.: 019957-020210US

TOWNSEND and TOWNSEND and CREW LLP

Anno C. Vundol

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Karl F. JOHNSON et al.

Application No.: 10/585,440

Filed:

For: VECTORS FOR RECOMBINANT PROTEIN EXPRESSION IN E. COLI

Customer No.: 20350

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Confirmation No.: 7672

Examiner:

Art Unit:

RESPONSE TO NOTIFICATION OF MISSING REQUIREMENTS REQUEST FOR A SUBSTITUTE CRF COPY OF SEQUENCE LISTING

The Notification of Missing Requirements Under 35 U.S.C. 371 in the DO/EO/US, dated March 9, 2007, requests a substitute computer readable form (CRF) copy of the "Sequence Listing" and a statement that the content of the sequence listing information recorded in the CRF is identical to the written sequence listing and includes no new matter. However, the undersigned asserts that the request is erroneous and the Raw Sequence Listing submitted with the application has been entered.

The undersigned submits herewith a copy of the Raw Sequence Listing as entered and processed by the Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) on July 17, 2006. The entry indicates that no errors were detected.

Karl F. JOHNSON et al. Application No.: 10/585,440

Page 2

The Commissioner is hereby authorized to charge any additional fees associated with this paper or during the pendency of this application, or credit any overpayment, to Deposit Account No. 20-1430.

Respectfully submitted,

Beth L. Kelly

Reg. No. 51,868

Customer No. 20350

TOWNSEND and TOWNSEND and CREW LLP Two Embarcadero Center, Eighth Floor San Francisco, California 94111-3834

Tel: 415-576-0200 Fax: 415 576-0300

BLK:ack

61047987 v1



PCT OPERATIONS

FACSIMILE TRANSMISSION COVER SHEET

DATE:	3-23-2007
TO:	Mr. Haven Hokamura
	TELEPHONE:
FROM:	Debbie Millians
	TELEPHONE: 7138-9140 H205
	FAX NO.: 703-305-3230 OR 703-308-4785
MESSA	GE:
NUMBE	ER OF PAGES (INCLUDING THIS PAGE)

14:4

[44]

13.,

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number:

Source:

Date Processed by STIC:

10/585,440 Trup

ENTERED

Page 1 of 7



IFWP

RAW SEQUENCE LISTING DATE: 07/17/2006 PATENT APPLICATION: US/10/585,440 TIME: 11:07:33

Input Set : A:\019957-020210US.txt
Output Set: M:\CRF4\07172006\J585440.raw

```
4 <110> APPLICANT: Johnson, Karl F.
              Bezila, Dan
      6
              Ngo, Winnie
              Hakes, David
     9 <120> TITLE OF INVENTION: VECTORS FOR RECOMBINANT PROTEIN
    10
              EXPRESSION IN E. COLI
    12 <130> FILE REFERENCE: 019957-020210US
:--> 14 <140> CURRENT APPLICATION NUMBER: US/10/585,440
!--> 14 <141> CURRENT FILING DATE: 2006-07-06
    14 <150> PRIOR APPLICATION NUMBER: PCT/US2005/00302
    16 <151> PRIOR FILING DATE: 2005-01-06
    18 <150> PRIOR APPLICATION NUMBER: US 60/535,263
    19 <151> PRIOR FILING DATE: 2004-01-09
    21 <160> NUMBER OF SEQ ID NOS: 13
    23 <170> SOFTWARE: FastSEQ for Windows Version 4.0
    25 <210> SEQ ID NO: 1
    26 <211> LENGTH: 5039
    27 <212> TYPE: DNA
    28 <213 > ORGANISM: Artificial Sequence
    30 <220> FEATURE:
    31 <223> OTHER INFORMATION: Custom DNA vector
    33 <400> SEQUENCE: 1
    34 geategiggt gicaegeteg tegitiggta iggeticati cageteeggt teccaaegat 60
    35 caaggegagt tacatgatee eccatgttgt geamamaage ggttagetee tteggteete 120
    36 cgatcggggg gggggggaaa gccacgttgt gtctcaaaat ctctgatgtt acattgcaca 180
    37 agataamaat atatcatcat gaacaataaa actgtctgct tacataaaca gtaatacaag 240
    38 gggtgttatg agecatatte aacgggaaac gtottgetee aggeegegat taaatteeaa 300
    39 catggatget gatttatatg ggtataaatg ggetegegat aatgteggge aatcaggtge 360
    40 gacaatetat egactgtatg ggaageeega tgegeeagag ttgtttetga aacatggeaa 420
    41 aggtagogtt gocaatgatg ttacagatga gatggtcaga ctaaactggc tgacggaatt 480
    42 tatgectett ecgaceatea ageattttat cegtaeteet gatgatgeat ggttaeteae 540
    43 cactgegate ceegggaaaa cageatteea ggtattagaa gaatateetg atteaggtga 600
   44 anatatight gatgogotgg cagtgitoct gogooggitg cattogathe otgittgian 660 45 tigicothic aacagogate gogiatitog telegoteag gogoaateae gaatgaataa 720 46 oggittegel gatgogatg attitigatga ogagogtaat ggotggoolg tigaacaagt 780
    47 ctggaaagaa atgcataagc tattgccatt ctcaccggat tcagtcgtca ctcatggtga 840
    48 tttctcactt gataacetta tttttgacga ggggaaatta ataggttgta ttgatgttgg 900
   49 acgastessa ateseasace sataceassa tettseeate etatssaact seetesstsa 960
   50 gttttctcct tcattacaga aacggctttt tcaaaaatat ggtattgata atcctgatat 1020
   51 gaataaattg cagttteatt tgatgetega tgagttttte taaagtacta etetteettt 1080
   52 ttcaatatta ttgaagcatt tatcagggtt attgtctcat gagcggatac atatttgaat 1140
   53 gtatttagaa aaataaacaa ataggggtto ogogcacatt toocogaaaa gtgccacetg 1200
   54 acgatgaaat tgtaaacght aataittigt taaaattcgc gttaaattti igttaaatca 1260
```

RAW SEQUENCE LISTING DATE: 07/17/2006 PATENT APPLICATION: US/10/585,440 TIME: 11:07:33

Input Set : A:\019957-020210US.txt
Output Set: N:\CRF4\07172006\J585440.raw

55 gotcattttt taaccaatag googaaatog goaaaatoco ttataaatoa aaagaatago 1320 56 cogagatagg gitgagigit gitccagtit ggaacaagag tocaciatia aagaacgigg 1380 57 actocaaogt caaagggoga aaaacogtot atcagggoga tggoocacta ogtgaaddat 1440 58 cacccaaatc aagttittig gggtcgaggt gccgtaaagc tctaaatcgg aaccctaaag 1500 59 ggagccccg atttagagct tgacggggaa agccggcgaa cgtggcgaga aaggaaggga 1560 60 agaaagcgaa aggagcgggc gctagggcgc tggcaagtgt agcggtcacg ctgcgcgtaa 1620 61 ccaccacacc egecgegett aatgegeege tacagggege gtactatggt tgetttgaeg 1680 62 categictaa gaaaceatta tiateatgae attaaeetat aaaaatagge giateaegag 1740 63 geeettiegt etteaageag ateigaaaaa aaageeeget cattaggegg geteagatet 1800 64 gotoatgitt gacagottat catogatgic gacggtacog aattootoga gictagaaag 1860 65 cttgageteg gateceatat gaceteetaa geategatgg atcetgttte etgtgtgaaa 1920 66 tigttatecg cicacaatte cacacattat acgageegat gattaattgt caacaggggg 1980 67 atggggagta agetgatect gttteetgtg tgaaattglt ateegeteac aattecacae 2040 68 attatacqag ccgatgatta attgtcaaca gggggatggg gagtaagctc atcgatggat 2100 69 cgatectgtt teetgtgtga aattgttate egeteacaat teeacacatt atacgageeg 2160 70 gaagcataaa gtgtaaagcc tggggtgcct aatgagtgag ctaacttaca ttaattgcgt 2220 71 tgcgctcact gcccgctttc cagtcgggaa acctgtcgtg ccaggacacc atcgaatggt 2280 72 gcaaaacctt tcgcggtatg gcatgatage gcccggaaga gagtcaatte agggtggtga 2340 73 atgtgaaacc agtaacgtta tacgatgtcg cagagtatgc cggtgtctct tatcagaccg 2400 74 titecegegt ggtgaaccag gccagecacg titetgcgaa aacgcggggaa aaagtggaag 2460 75 cggcgatggc ggagetgaat tacattccca accgcgtggc acaacaactg gcgggcaaac 2520 76 agtogttgot gattggogtt godaceteda gtotggoodt goacgogoog togdaaattg 2580 77 tegeggegat taaaletege geegateaac tgggtgecag egtggtggtg tegatggtag 2640 78 aacgaagogg ogtogmagod tgtamagogg oggtgomcam tottotogog camegogtom 2700 79 gtgggetgat cattaactat cegetggatg accaggatge cattgetgtg gaagetgeet 2760 80 gcactaatgt teeggegtta tttettgatg tetetgacea gacacceate aacagtatta 2820 81 tttteteea tgaagaeggt aegegaetgg gegtggagea tetggtegea ttgggteaee 2880 82 agcaaatoge getgttageg ggcccattaa gttetgtete ggcgcgtetg cgtetggetg 2940 83 getggcataa atateteaet egcaateaaa tteageegat ageggaaegg gaaggegaet 3000 84 ggagtgccat gtccggtttt caacaaacca tgcaaatgct gaatgagggc atcgttccca 3060 85 ctgcgatgct ggttgccaac gatcagatgg cgctgggcgc aatgcgcgcc attaccgagt. 3120 86 ccgggctgcg cgttggtgcg gatatotcgg tagtgggata cgacgatacc gaagacagct 3180 87 catgitatat coogcogita accaccatos sacaggatti togeotgoig gggcasacos 3240 BB gegtggaceg cttgctgcaa ctctctcagg gccaggeggt gaagggcaat cagctgttgc 3300 B9 cegtctcact ggtgaaaaga aaaaccaccc tggcgcccaa tacgcaaacc gcctctcccc 3360 90 gegegttgge egatteatta atgeagetgg caegacaggt tteecegactg gaaageggge 3420 91 agtgagegea aegeaattaa tgtaagttag eteaeteatt aggeaeeeea ggetttaeae 3480 92 tttatgette eggetegtat ggegtttegg tgatgaeggt gaaaacetet gacacatgea 3540 93 goteceggag acggteacag cttgtetgta ageggatgee gggageagae aageeegtea 3600 94 gggcgcgtca gcgggtgttg gcgggtgtcg gggcgcagcc atgacccagt cacgtagcga 3660 95 tageggagtg tatactggct taactatgeg gcatcagagc agattgtact gagagtgcac 3720 96 cattatgogg tgtgaaatac cgcacagatg cgtaaggaga aaataccgca tcaggegctc 3780 97 ttoogottoo togotoactg actogotogo ctoggtogtt cggctgcggc gagcggtatc 3840 98 agotoactca aaggcggtaa tacggttatc cacagaatca ggggataacg caggaaagaa 3900 99 catgtgagea aaaggecage aanaggecag gancegtaaa anggeegegt tgetggegtt 3960 100 titccatagg ctccgcccc ctgacgagda tcacasaat cgacgctcaa gtcagaggtg 4020 101 gegaaaceeg acaggaetat aaagatacea ggegttteee eetggaaget eeetegtgeg 4080 102 ctctcctgtt ccgaccctgc cgcttaccgg atacctgtcc gcctttctcc cttcgggaag 4140 103 cgtggcgctt tctcataget cacgctgtag gtatctcagt tcggtgtagg tcgttcgctc 4200

Page 3 of 7

RAW SEQUENCE LISTING DATE: 07/17/2006 PATENT APPLICATION: US/10/585,440 TIME: 11:07:33

Input Set : A:\019957-020210US.txt
Output Set: N:\CRF4\G7172006\J585440.raw

```
104 caagetggge tgtgtgcaeg aaceceegt teagecegae egetgegeet tateeggtaa 4260
 105 ctategtett gagtecaace eggtaagaca egacttateg ceactggeag cagegactgg 4320
 106 taacaggatt agcagagega ggtatgtagg eggtgctaca gagttettga agtggtggcc 4380
 107 taactacgge tacactagaa ggacagtatt tggtatetge getetgetga agecagttac 4440
 108 cttcggaaaa agagttggta gctcttgatc cggcaaacaa accaccgctg gtagcggtgg 4500
 109 tttttttgtt tgcaagcagc agattacgcg cagaaaaaaa ggatctcaag aagatccttt 4560
 110 gatetttet acggggtetg æggeteagtg gaæcgæaaæe teæegttæag ggættttggt 4620
111 catgagætta teææææægæ tetteæeeta gateetttta aattææææt gæægtttææ 4680
 112 atcaatctaa agtatatatg agtaaacttg gtctgacagt taccaatgot taatcagtga 4740
 113 ggcacctate teagegatet gretattteg treatceata gregerigae recegging 4800
 114 gtagataact acgatacggg agggettacc atetggeccc agtgetgeaa tgatacegeg 4860
 115 Agacccaege teaceggete cagatttate agraataaac cagecageeg gaagggeega 4920
 116 gcgcagaagt ggtcctgcaa ctttatccgc ctccatccag tctattaatt gttgccggga 4980
117 agetagagta agtagttege cagttaatag tttgcgcaac gttgttgcca ttgctgcag 5039
 121 <210> SEQ ID NO: 2
 122 <211> LENGTH: 5039
 123 <212> TYPE: DNA
 124 <213> ORGANISM: Artificial Sequence
 126 <220> PEATURE:
127 <223> OTHER INFORMATION: Custom DNA vector
129 <400> SEQUENCE: 2
130 geategigt greacgereg tegittiggta tiggetteatt cageteeggt teccaacgat 60
131 caaggegagt tacatgatee cocatgitigt gcaaaaaage ggttagetee tieggteete 120
132 cgatcggggg ggggggaaa gccacgttgt gtotcaaaat ctctgatgtt acattgcaca 180
133 agataasaat statcatcat gaacastass actgtctgct tacatassca gtaatacaag 240
134 gggtgttatg agccatatte aacgggaaac gtcttgctcc aggccgcgat taaattccaa 300
135 catggatget gatttatatg ggtataaatg ggotegegat aatgteggge aateaggtge 360
136 gacaatctat cgactgtatg ggaagcccga tgcgccagag ttgtttctga aacatggcaa 420
137 aggtagcgtt gccaatgatg ttacagatga gatggtcaga ctaaactggc tgacggaatt 480
138 tatgggtett cegaccatea agcattttat cegtactect gatgatgcat ggttactcac 540
139 cactgogato coogggaaaa cagcattoca ggtattagaa gaatatootg attoaggtga 600
140 aaatattgtt gatgegetgg eagtgtteet gegeeggttg cattegatte etgtttgtaa 660
141 ttgtcctttt aacagcgate gegtattteg tetegeteag gegeaateae gaatgaataa 720 142 eggtttggtt gatgegagtg attttgatga egagegtaat ggetggeetg ttgaacaagt 780
143 ctggaaagaa atgcataagc tattgccatt ctcaccggat tcagtcgtca ctcatggtga 840
144 tttctcactt gataacctta tttttgacga ggggaaatta ataggttgta ttgatgttgg 900
145 acgagtegga ategeagace gataccagga tettgecate ctatggaact geeteggtga 960
146 gttttctcct tcattacaga aacggctttt tcaaaaatat ggtattgata atcctgatat 1020
147 gaataaattg cagttteatt tgatgetega tgagttttte taaagtaeta etetteettt 1080
148 ttcaatatta ttgaagcatt tatcagggtt attgtctcat gagcggatac atatttgaat 1140
149 gtatttagaa aaataaacaa ataggggtto ogogcacatt toocogaaaa gtgccacctg 1200
150 acgatgaaat tgtaaacgtt aatattttgt taaaattcgc gttaaatttt tgttaaatca 1260
151 gctcattttt taaccaatag gccgaaatcg gcaaaatccc ttataaatca aaagaatagc 1320
152 ccgagatagg gtigagigti gitccagtit ggaacaagag tccactaita aagaacgigg 1380
153 actocaacgt caaagggcga Baaaccgtot atcagggcga tggcccacta cgtgaaccat 1440
154 cacccaaatc aagttttttg gggtcgaggt gccgtaaagc tctaaatcgg aaccctaaag 1500
155 ggagcccccg atttagagct tgacggggaa agccggcgaa cgtggcgaga aaggaaggga 1560
156 agaaagegaa aggagegge getagggege tggeaagtgt ageggteaeg etgegegtaa 1620
157 ccaccacac egeogegett aatgegeege tacagggege gtactatggt tgetttgaeg 1680
```

RAW SEQUENCE LISTING DATE: 07/17/2006 PATENT APPLICATION: US/10/585,440 TIME: 11:07:33

Input Set : A:\019957-020210US.txt
Output Set: N:\CRF4\07172006\J\$85440.raw

158 categictaa gaaaccatta tiateatgae attaaeetat aaaaatagge giateaegag 1740 159 gecetttegt etteaageag atetgaaaaa aaageeeget cattaggegg geteagatet 1800 160 geteatgtt gaeagettat categatgte gaeggtaeeg aatteetega gtetagaaag 1860 161 cttgageteg gateceatat gaceteetaa geategatag atcetgttte etgtgtgaaa 1920 162 tigitateeg etcacaatte cacacattat acgageegat gattaattgt caacaggggg 1980 163 atggggagta agetgatect gttteetgtg tgaaattgtt ateegeteac aatteeacac 2040 164 attatacgag ccgatgatta attgtcaaca gggggatggg gagtaagete atcgatggat 2100 165 cgatcctgtt tcctgtgtga aattgttatc cgctcacaat tccacacatt atacgagccg 2160 166 gaagcataaa gtgtaaagce tggggtgeet aatgagtgag etaaettaca ttaattgegt 2220 167 tgcgctoact gcccgctttc cagtcgggaa acctgtcgtg ccaggacacc atcgaatggt 2280 168 gcamaacett tegeggtatg gcatgatage geoeggaaga gagteaatte agggtggtga 2340 169 atgtgaaace agtaacgtta tacgatgteg cagagtatge eggtgtetet tatcagaceg 2400 170 tttcccgcgt ggtgaaccag gccagccacg tttctgcgaa aacgcgggaa aaagtggaag 2460 171 eggegatgge ggagetgaat tacatteeca acceegtgge acaacaactg gegggcaaac 2520 172 agtegitget gatiggegit gecaccieca gietggeeet geacgegieg tegeanatig 2580 173 togoggogat taaatotogo googatoaac tgggtgooag cgtggtggtg togatggtag 2640 174 macgaagegg egtegmagee tgtmaagegg eggtgemena tettetegeg caacgegtem 2700 175 gtgggctgat cattaactat ccgctggatg accaggatgc cattgctgtg gaagetgeet 2760 176 gractaatgt teeggegtta tttettgatg tetetgacca gacacccate aacagtatta 2820 177 ttttctccca tgaagacggt acgcgactgg gcgtggagca tctggtcgca ttgggtcacc 2880 178 agcamatogo gotgttagog ggoccattaa gttotgtoto ggogogtotg cgtctggotg 2940 179 getggcataa atateteaet egcaateaaa tteageegat ageggaaegg gaaggegaet 3000 180 ggagtgccat gtccggtttt caacaaacca tgcaaatgct gaatgagggc atcgttccca 3060 181 ctgcgatgct ggttgccaac gatcagatgg cgctgggcgc aatgcgcgcc attaccgagt 3120 182 ccgggetgeg cgttggtgeg gatatetegg tagtgggata cgacgatace gaagacaget 3180 183 catgitatat deegeegita accaecatea aacaggatit tegecigetg gggcmaacca 3240 184 gegiggaceg ettgetgeaa eteteteagg geeaggeggt gaagggeaat eagetgttge 3300 185 eegteteaet ggigaaaaga aaaaceacee tggegeeeaa tacgeaaace geeteteece 3360 186 gegegttige egatteatta atgeagetgg caegacaggt tteetgattg gaaageggge 3420 187 agtgagegea aegeaattaa tgtaagttag eteaeteatt aggeaceeca ggetttacae 3480 188 titatgette eggetegtat ggegtttegg tgatgaeggt gaaasectet gacacatgea 3540 189 geteceggag acggtcacag ettgtetgta ageggatgee gggagcagae aagecegtea 3600 190 gggcgcgtca gcgggtgttg gcgggtgtcg gggcgcagcc atgacccagt cacgtagcga 3660 191 tageggagtg tataetgget taactatgeg geatcagage agattgtaet gagagtgeac 3720 192 cattatgcgg tgtgaaatac cgcacagatg cgtaaggaga aaataccgca tcaggcgctc 3780 193 thregettee tegeteactg actogetgeg eteggtegtt eggetgege gageggtate 3840 194 ageteactea aaggeggtaa taeggttate cacagaatea ggggataacg caggaaagaa 3900 195 catgtgagea aaaggecage aaaaggecag gaacegtaaa aaggeegegt tgetggegtt 3960 196 tttccatagg ctccgcccc ctgacgagca tcacaaaaat cgacgctcaa gtcagaggtg 4020 197 gegaaacceg acaggactat aaagatacca ggegttteec cetggaaget ceetegtgeg 4080 198 ctetectgtt cogacoctge cgcttacogg atacetgtee gcctttetee ettegggaag 4140 199 egtggegett teteataget caegetgtag gtateteagt teggtgtagg tegttegete 4200 200 caagetggge tgtgtgcacg aaccccccgt tcagcccgac cgctgcgcct tatccggtaa 4260 201 ctatogtott gagtocaaco oggtaagaca ogacttatog coactggcag cagocactgg 4320 202 taacaggatt agcagagcga ggtatgtagg cggtgctaca gagttcttga agtggtggcc 4380 203 taactacggc tacactagas ggacagtatt tggtatctgc gctctgctgs agccagttac 4440 204 cttcggaaaa agagttggta gctcttgatc cggcaaacaa accaccgctg gtagcggtgg 4500 205 tittitigtt tgcaagcagc agattacgcg cagaaaaaaa ggatctcaag aagatccttt 4560 206 gatettttet acggggtetg acgeteagtg gaacgaaaac teacgttaag ggattttggt 4620

Page 5 of 7

DATE: 07/17/2006

TIMB: 11:07:33

```
Output Set: N:\CRF4\07172006\J585440.raw
 207 catgagatta tcaaaaagga tetteaceta gateettta aattaaaaat gaagttttaa 4680
 208 atcastctas agtatatatg agtasacttg gtctgacagt taccastgct taatcagtga 4740
 209 ggcacctate teagegatet gtetattteg tteatecata gttgeetgae teecegtegt 4800
210 gtagataact acgatacggg agggettacc atctggeecc agtgetgeaa tgatacegeg 4860
211 agacccaege teaceggete cagatttate ageaataaac cagecageeg gaagggeega 4920
212 gegeagaagt ggteetgeaa etttateege etecateeag tetattaatt gttgeeggga 4980
213 agctagagta agtagttege cagttaatag tttgcgcaac gttgttgcca ttgctgcag 5039
217 <210> SEQ ID NO: 3
218 <211> LENGTH: 6209
219 <212> TYPE: DNA
220 <213> ORGANISM: Artificial Sequence
222 <220> FEATURE:
223 <223> OTHER INFORMATION: Custom DNA vector
225 <400> SEQUENCE: 3
226 gcatcgtggt gtcacgctcg tcgtttggta tggcttcatt cagctccggt tcccaacgat 60
227 caaggegagt tacatgatec cocatgitgt gcaaaaaage ggttagetec tieggteete 120 cgateggggg gggggggaaa gceaegitgt gieteaaaat eletgatgit acatigeaea 180
229 agataaaaat atatcatcat gaacaataaa actgtotgot tacataaaca gtaatacaag 240
230 gggtgttatg agccatattc aacgggaaac gtcttgctcc aggccgcgat taaattccaa 300
231 Catggatget gatttatatg ggtataaatg ggetegegat aatgteggge aateaggtge 360
232 gacaatetat egaetgtatg ggaageeega tgegeeagag ttgtttetga aacatggeaa 420
233 aggtagegtt gccaatgatg ttacagatga gatggtcaga ctamactggc tgacggaatt 480
234 tatgeetett degaccatda ageattttat degtacteet gatgatgeat ggttactead 540
235 cactgogato coogggaaaa cagcattoca ggtattagaa gaatatootg attoaggtga 600
236 aaatattgtt gatgcgctgg cagtgttcct gcgccggttg cattcgattc ctgtttgtaa 660
237 ttgtcctttt aacagcgatc gcgtatttcg tctcgctcag gcgcaatcac gaatgaataa 720
238 cggtttggtt gargcgagtg attttgatga cgagcgtaat ggctggcctg ttgaacaagt 780
239 ctggaaagaa atgcataagc tattgccatt ctcaccggat tcagtcgtca ctcatggtga 840
240 tttctcactt gataacetta tttttgacga ggggaaatta ataggttgta ttgatgttgg 900
241 acgagtogga ategoagaco gataccagga tottgocato otatggaact gootoggtga 960
242 gttttctcct tcattacaga aacggetttt tcaaaaatat ggtattgata atcctgatat 1020
243 gaataaattg cagtiteatt tgatgetega tgagttttte taaagtaeta etetteettt 1080
244 ttcaatatta ttgaagcatt tatcagggtt attgtctcat gagcggatac atatttgaat 1140 245 gtatttagaa aastamacaa ataggggttc cgcgcacatt tccccgaaaa gtgccacctg 1200
246 acquigaaat tgtamacgtt aetattttgt tamaattcgc gttamatttt tgttamatca 1260
247 geteatett taaccantag geeganateg gemanatece teatanaten anagantage 1320
248 ccgagatagg gttgagtgtt gttccagttt ggaacaagag tccactatta aagaacgtgg 1380
249 actccaacgt caaagggcga aaaaccgtct atcagggcga tggcccacta cgtgaaccat 1440
250 cacccanate augitititg ggglegaggi geoglanage tetanategg aaccclanag 1500
251 99agcccccg atttagagct tgacggggaa agccggcgaa cgtggcgaga aaggaaggga 1560
252 agaaagcgaa aggagcgggc gctagggcgc tggcaagtgt agcggtcacg ctgcgcgtaa 1620
253 ccaccacace egeogogott aatgegoogo tacagggogo gtactatggt tgetttgacg 1680
254 categortaa gaaaccatta ttatcatgac attaacctat aaaaataggc gtatcacgag 1740
255 gccctttegt etteaageag atetgaaaaa aaageeeget cattaggegg geteagatet 1800
256 geteatgett gacagettat categatgte gacggtaceg aattectega gtetagaaag 1860
257 cttgageteg gateegaatt etgaaateet tecetegate eegaggttgt tgttattgtt 1920
258 attgttgttg ttgttcgage tegaattagt etgegegtet tteagggett categaeagt 1980
259 ctgacgaccg ctggcggcgt tgatcaccgc agtacgcacg gcataccaga aagcggacat 2040
260 ctgcgggatg ttcggcatga tttcaccttt ctgggcgttt tccatagtgg cggcaatacg 2100
```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/585,440

Input Set : A:\019957-020210US.txt

Page 6 of 7

VERIFICATION SUMMARY DATE: 07/17/2006 PATENT APPLICATION: US/10/585,440 TIME: 11:07:34

Input Set : A:\019957-020210US.txt
Output Set: N:\CRF4\07172006\J585440.raw

0:14 M:270 C: Current Application Number differs, Replaced Current Application No 0:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date